TRADE, INVESTMENT AND GLOBALIZATION

The Digital Economy for Economic Development: Free Flow of Data and Supporting Policies*

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Abstract

The digital economy provides ample opportunities for G20 economies to accelerate inclusive economic growth. To take advantage of digital technology, free flow of data backed up by a series of policies to address other public policy objectives must be promoted. However, policies for the flow of data and data-related businesses are still underdeveloped and fragmented across countries. Nevertheless, although ample controversy exists, G20 economies must design and implement a series of policies as soon as possible. We will show in this policy brief that standard microeconomic theory can provide guidance to formulate such policies.

Challenge

Digital technology has two faces: information technology (IT) and communication technology (CT[1]). IT represented by artificial intelligence (AI), robotics, and machine learning speeds up data processing, reduces the number of tasks, and generates concentration forces for economic activities. On the other hand, CT such as the internet and smartphones overcomes distance, makes communication and matching easier, encourages the division of labor, and yields dispersion forces. From the viewpoint of newly developed and developing countries, while the application of IT must be tried, the immediate focus must be placed on CT.

The wave of CT has already arrived. Thanks to a drastic cost reduction in business-to-consumer (B-to-C) and consumer-to-consumer (C-to-C) matching, internet platforms and digital businesses have been mushrooming, including social media, e-commerce, net-assisted transportation, matching services in lodging, e-payments, and fintech. We foresee the emergence of cross-border service outsourcing or the third unbundling (Baldwin 2016). The usage of CT will also have strong implications for inclusiveness stipulated in the Sustainable Development Goals. Although platform providers require high-level human resources, platform users do not have to meet high skill qualifications. CT provides easier access to information, communication, and economic opportunities for a wide range of people.

However, the policy regime for the governance of data is only at a nascent stage; it is underdeveloped and fragmented across countries. A fundamental problem is that the logic of economic justification for policies is not well established. Policies related to data flows and data-related businesses are overseen by various ministries and agencies, and coordination is often minimal.

There is a predecessor from which we can learn, i.e., free trade in goods. There are four kinds of policies that support free trade in goods. The first is policy that liberalizes and facilitates trade. Simple tariff removal is not enough to realize

[1] Aghion, et al. (2014) initially proposed the concept of IT and CT in the context of intra-firm governance. Then, Baldwin (2016) applied the concept for the international division of labor.

the smooth flow of goods. We need the removal of redundant non-tariff measures, the liberalization of trade-related services, and trade facilitation. The second is policy that corrects or cancels out distortion due to market failure. Market failure comes from the existence of externalities, the existence of public goods, economies of scale, imperfect competition, and incomplete information. We must identify where a market failure exists and apply appropriate policy, preferably the first-best policy. The third is policy that reconciles other value judgments with economic efficiency. GATT Article XX General Exceptions takes care of values such as public morals, life and health of humans, animals, and plants, and the protection of national treasures. The article specifies what sorts of exceptions are allowed and requests member countries to apply least trade-restrictive measures. The fourth is policy that incorporates imported goods and trade activities within the domestic policy regime. An example is the border tax in the European Union (EU), which is intended to adjust for the value added tax imposed on domestic producers.

Proposal

This policy brief suggests that a systematic formation of policies for the flow of data and data-related businesses can be developed based on an analogy with trade in goods. On this basis, the brief classifies a series of data-related policies based on the standard microeconomic theory and provides a starting point for policy making.

1. Free flow of data and the justification for government policies

Drawing an analogy from free trade in goods, we set “free flow of data” based on the standard microeconomic theory as a starting point. The benchmark model is the microeconomic model under perfect competition in which the laissez-faire economy achieves the Pareto efficient equilibrium. The implication is that without market failure, the economy can achieve the highest welfare. There is a presumption that free flow is consistent with optimal outcomes.

Public policy intervention is justified if one of the following conditions holds:

(i) Further policy effort for liberalization and facilitation is required.

(ii) Market failure due to the existence of externalities, the existence of public goods, economies of scale, imperfect competition, or incomplete/asymmetric information is found, and a policy to correct or cancel out market distortion can be effective.

(iii) Important values or social concerns other than economic efficiency such as privacy protection, public morals, human health, or national security exist.

(iv) Policies are needed in order to accommodate data flows and new data-related businesses in the domestic policy regime.

In the following, a series of policies on data flows and data-related businesses will be listed along these four categories.

2. Policies for liberalization and facilitation

The flow of data is by nature almost frictionless, regardless of national borders. Once the internet connects us, data moves freely unless governments impose restrictions.

However, there is still room for further liberalizing and facilitating the flow of data and data-related transactions. The following is a list of policies discussed in the WTO and other international forums, or covered by measures in regional trade agreements.

(i) Non-discrimination for digital content

The non-discrimination principle, i.e., the most-favored-nations (MFN) and the national treatment (NT) principle, must be applied for digital content. There is still some discussion on the definition of digital content as well as the coverage of the existing principle in the WTO, particularly GATS.

(ii) Customs duties on electronic transmissions

At the Second WTO Ministerial Meeting in 1998, the WTO members agreed to the "Ministerial Declaration on Global Electronic Commerce," that promised to maintain the practice of not imposing customs duties on electronic transmissions. The moratorium has been extended since then.

(iii) Customs duties on parcels: *de minimis*

The moratorium still allows tariff imposition on goods that move across national borders. Thus, small parcels by e-commerce are subject to tariffs. There is an economic argument claiming that exempting de minimis - i.e., low-valued parcels - from tariffs and possibly other taxes, could help cross-border e-commerce to expand, particularly for small businesses (Hufbauer and Wong 2011, Suominen 2017).

(iv) Electronic authentication and electronic signatures

These make not only e-commerce but also various remote transactions quick and efficient. International cooperation is needed to support cross-border commercial activities.

3. Policies to correct or cancel out market failure

The digital economy has built-in potential for market failure, given that big data gives rise to network externalities, economies of scale and scope, and pervasive information asymmetry. Each of these conditions individually can result in market failure; combined, they create a strong likelihood that problems will emerge.[2] Indeed, even in the early years of this emerging economy, examples have surfaced as the technology giants have been censured for abuse of

[2] Ciuriak (2018a) refers to the new economic growth theory for the knowledge-based economy and emphasizes the seriousness of the potential for market failure in the data-driven economy.

dominance,[3] ethical failures in exploiting private information,[4] tax avoidance,[5] leveraging their size to extract public subsidies,[6] and pre-emptive takeovers of potential future competitors.[7] As individual governments react to specific instances with policy remedies,[8] the design of effective and globally coherent distortion-canceling policies thus become imperative.

(1) Competition policy

The powerful forces for concentration inherent in the characteristics of the data-driven economy are already evident in the growing concentration within the industry (The Economist, 2016); and, as noted, specific instances of abuse have been identified and countermeasures taken. Some degree of caution is, however, necessary in applying competition policy remedies. In theory, market distortion is generated by the abuse of market power rather than by market concentration per se. Furthermore, even in a case of monopoly, serious market distortions may not arise if the market remains contestable – i.e., if the possibility of competitive entry remains open to discipline the behavior of the incumbent dominant firms. The speed of technological progress is an important consideration in the latter regard as new business models may disrupt established dominant market positions.

Nonetheless, many countries have concerns, in particular about the giant platform companies (GAFA: Google, Amazon.com, Facebook, Apple Inc.; and BAT: Baidu, Alibaba, Tencent), given their dominance in big data usage, possibly unfair trade practices, and moves to swallow potential future rivals (e.g., Facebook acquiring Whatsapp). The merger of Uber and Grab in their

[3] Google has been found guilty by Germany's competition authority of abuse of its dominance to favour its affiliated companies. European Commission (2018).
[4] Facebook has been censured for ethical breaches as well as abuse of dominance by the UK House of Commons' Digital, Culture, Media and Sport Committee (House of Commons, 2019).
[5] Financial Times (2018).
[6] Simon (2018).
[7] Solomon (2016).
[8] For example, in 2017, Germany introduced a major reform of its competition law with the aim of creating a "regulatory framework for the digital economy". Freshfields Bruckhaus Deringer LLP (2018).

transport operations in Southeast Asian countries was also regarded as a possible factor for reducing competition. And the use of data to implement price discrimination practices to capture consumer surplus for corporate profits also has welfare implications since this tends to increase income disparities.

Generally, a substantially strengthened competition policy at the international level appears to be called for to correct or cancel out market distortion in the data-driven economy. At the same time, recognizing that competition policy activism can be motivated by protectionism, multilateral rules are needed to prevent trade frictions from emerging from differing interpretations of whether abuses of market dominance were in fact in evidence, and they must stipulate the appropriate remedies (e.g., whether market dominance should be corrected by mandatory sharing of data with competitors, for example).

(2) Consumer protection

Transactions between businesses and consumers tend to be characterized by asymmetric information; sellers are typically much more knowledgable regarding goods and services they sell than buyers. In addition, once a problem occurs, businesses are in an advantageous position compared to individual consumers in dealing with the consequences. Such market failure is potentially more frequent and serious in e-commerce than with physical transactions and more difficult to remedy in cross-border e-commerce than in a domestic market context, not least because novel forms are enabled by exploitation of data – for example, websites tracking customers' surfing history can "personalize" prices, substantially expanding the scope for first degree price discrimination (Hannak et al., 2014; Mahdawi, 2016).

Market solutions can actually do much to resolve these concerns. For example, the "market for lemons" (Akerlof, 1970) illustrates how market mechanisms emerge to address problems of asymmetric information. Modern examples of such market responses include consumer rating systems on eBay and consumer grievance desks.

Nonetheless, to make consumers feel safe, to optimize welfare gains, and to encourage online markets to expand, there may be a role for government to intervene to protect consumers, including by monitoring the performance of market mechanisms. UNCTAD[9] indicates that only 51% of the countries in the world have online consumer protection legislation and 33% of the countries provide no data. The quality of the legal arrangements as well as their implementation also differ widely. Accordingly, there appears to be room for broader adoption of best practices in this area.

As for cross-border e-commerce, international cooperation and coordination are certainly needed. OECD (2016, 2018) is a good starting point for constructing a system of consumer protection. The EU has a series of policies for cross-border e-commerce under the umbrella of the Regulation on Consumer Protection Cooperation including online dispute resolution, alternative dispute resolution for consumers, European Consumer Centres Network, and European small claims procedure.[10]

(3) Intellectual property rights (IPR) protection

The digital transformation raises both conventional issues related to IPR (the protection of IPR is foundational to knowledge-based business models) and novel ones related to data: e.g., the patentability of databases, ownership of data, secrecy of algorithms and source code (especially when these are used in ways which have legal consequences, such as determining eligibility for parole on grounds of likelihood of recidivism, etc.), and the expansion of the realm of trade secrets generally (e.g., new EU and US laws expanding the ambit of trade secrecy laws).

Alongside these issues related to supporting commercialization of data are new concerns about competitive access to data and even more fundamentally the

[9] https://unctad.org/en/Pages/DTL/STI_and_ICTs/ICT4D-Legislation/eCom-Consumer-Protection-Laws.aspx .
[10] https://ec.europa.eu/info/live-work-travel-eu/consumers_en .

suitability of traditional measures for incentivizing production of IP (patents and copyright) when IP can now be produced at a massive scale by AI.

Finally, because of different national circumstances and optimal policy choices, IPR protection is uneven across countries. The gap is becoming even larger with the digital divide.

TRIPs in the WTO is not obviously enough to protect IPR, particularly in the digital era.[11] CPTPP tries to strengthen IPR protection, though some criticism exists concerning its implementability. The EU considers its intellectual property law as a benchmark for international harmonization.[12] The Anti-Counterfeiting Trade Agreement (ACTA) was a trial on a plurilateral basis and was signed by eight countries in October 2011. However, it has so far failed to be validated due to the missing ratification of six countries. CIGI and Chatham House (2017) provide a collection of insightful policy papers on IPR protection in the digital era.

4. Policies to reconcile values and social concerns with economic efficiency

(1) Data and privacy protection

Privacy protection has become the most prominent concern in the digital economy; indeed, given the ubiquity of both state and corporate surveillance, the issues have even been regarded as touching on basic human rights. Policies must be designed so as to reconcile these values with economic efficiency.

UNCTAD [13] warns that many newly developed and developing countries have not yet established formal legal protection. The boundaries of privacy protection and the scope of data localization differ widely across countries (Hodson 2018, Sen 2018). In particular, the three major data "realms" - the US, the EU, and China – have constructed quite different data protection regimes

[11] See for example Aaronson (2018).
[12] See Seville (2015).
[13] https://unctad.org/en/Pages/DTL/STI_and_ICTs/ICT4D-Legislation/eCom-Data-Protection-Laws.aspx .

(Aaronson and Leblond 2018). Without a substantive effort for harmonizing the regulatory regimes, the digital world may become segmented.

The General Data Protection Regulation (GDPR) in the EU is currently the most advanced policy for protecting private data.[14] It clearly defines "personal data" and the rights of citizens and shows what and how the GDPR governs. The EU imposes strong data localization requirements for personal data and establishes adequacy conditions under which cross-border data exchanges are allowed with third countries. Criticisms of the GDPR focus on compliance costs borne by the business sector, a risk of degrading services for consumers, and stifling of innovation.[15]

Another effort is found in the APEC Cross-border Privacy Rules (CBPR) System, which is a voluntary, accountability-based system that facilitates privacy-respecting data flows among APEC economies.[16] So far, eight economies (the US, Mexico, Japan, Canada, Singapore, the Republic of Korea, Australia, and Chinese Taipei) have joined the system.

Mattoo and Meltzer (2018) pursue a desirable international policy framework by comparing the existing three types of policies to reconcile the free flow of data and privacy protection: unilateral development of national or regional regulation such as GDPR, international negotiation of trade disciplines such as CPTPP, and international cooperation involving regulators such as the EU-US Privacy Shield Agreement.[17]

Data protection issues have expanded beyond personal data. Massive business-related and other data including from Internet of Things (IoT) sources are starting to move across national borders. Redundant restrictions must be avoided.

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[14] https://ec.europa.eu/info/law/law-topic/data-protection_en .
[15] See for example Yaraghi (2018). Ferracane, Kren, and van der Marel (2018) attempt to quantify the cost of data restrictions on the productivity of firms across countries.
[16] http://www.cbprs.org/ .
[17] Not limited to the argument pertaining to privacy protection, Gao (2018) and Mitchell and Mishra (2018) seek possibilities of reconciling different regulatory systems under the umbrella of the WTO.

(2) Cybersecurity

Cybersecurity is one of the prime concerns for both the government and the private sector. Some countries, based on national security reasons, require disclosure of source code as condition for market access and/or "backdoor access" to proprietary and encrypted data, which creates risk of IPR leakage for companies.[18]

A portion of the cybersecurity issues relate specifically to critical national security interests; and given the international security divides, worldwide cooperation in depth may be inherently difficult to achieve, although a reasonable détente is an important goal to aim for.[19] It will be highly important for some international norms to be established and implemented. Another aspect of cybersecurity, cross-border cyber-attacks on both government agencies and private companies for example, requires international collaboration for preparing and implementing counter-measures.

Some express a concern that various regulations that are imposed in the name of cybersecurity are in fact hidden forms of protectionism.[20] The purpose of policies must be clarified, and the mechanism should be transparent in order to avoid erosion of legitimate market competition.

Although perfect harmonization of cybersecurity systems is difficult, there is ample room for international cooperation on policy making. The OECD has

[18] Moran (2015) reviews the cases of the compliance by IBM and Microsoft in the disclosure of source code in China. Meanwhile, the Reform Government Surveillance (RGS) group, which includes the major Internet corporations Apple, Google, Facebook, Microsoft, Oath, LinkedIn, Dropbox, Evernote, Snap, and Twitter, have been fighting against demands by the "Five Eyes" governments for backdoor access to proprietary and encrypted information in their networks. See, e.g., Owen (2018). Companies emphasize that backdoors for one create security weaknesses for others.
[19] Ciuriak (2018c).
[20] See Aaronson (2018) and Ikenson (2017).

developed an extensive program for the stocktaking of policies and the provision of policy guidelines.[21]

Finding a proper level of cybersecurity regulation has been a challenge. Overregulation would interfere with economic dynamism. Underregulation leaves parties open to cyber-attacks. In addition, although the government may want to keep room for policy discretion, gaps between legal arrangements and enforcement could also generate anti-business uncertainties.

(3) Other general exceptions

Other general exceptions may be considered in parallel with GATT XX. Public morals as well as human, animal, or plant life or health are natural concerns. Furthermore, culture and non-discrimination in race or gender may be the issues to take care of. Achieving these goals while minimizing barriers to trade is a challenge as always.

5. Policies to accommodate data flows and data-related businesses in the domestic policy regime

(1) Taxation

Data-related businesses are new, dynamic, and international. How to incorporate them in the existing domestic policy regime is a big challenge. One of the controversial issues is taxation.

One issue is on value added taxes (VAT). Many countries apply VAT that are collected from sellers. There is thus an argument that domestic service providers may become disadvantageous compared with foreign service providers through the internet who are not subject to such taxes in importing countries. On this issue, many countries have followed the recommendations

[21] See for example OECD (2012).

provided by BEPS Action 1 on Digital Economy[22] and have implemented a mechanism for collecting VAT on services acquired by private consumers from non-resident suppliers/sellers (if possible) or from the consumers on payment,[23] due to the fact that most of such payments are handled by a small number of actors in the financial sector.[24]

Another, more controversial issue is corporate income taxes. The traditional norm is that mode 1 (cross-border) service providers are treated like goods exporters and thus pay corporate income taxes in the home country, not in export-destination countries. However, where giant international platformers earn profits is not very clear. How they design and operate value chains is not often publicized in detail. There is concern regarding their tax arbitrage practices that take advantage of tax rate differences across countries to avoid tax payments. People also worry about a possible disadvantageous position of domestic platformers who pay corporate income taxes in full versus giant platformers who may not pay much. To address such concerns, discussions were held under the Inclusive Framework on BEPS in order to find a coordinated solution to this issue. [25] At the same time, a number of countries have started introducing or considering so-called "interim measures" to tax digital services on foreign platformers, often in the form of taxation on the amount of sales, under the belief that it is imperative to act quickly.

The logic of interim measures is partially understandable, but controversial. Economically, such taxes have an effect similar to the case of trade in goods where a tariff is imposed discriminatorily on specific exporters. How can a county identify the tax owing parties and their appropriate level of taxation? The debate surrounding these issues is significant.

[22] OECD (2015).
[23] Cahiers de Droit Fiscal International, 103-B (ISBN 9789012402057), p.64.
[24] As proposed by RIGONI (2000), XXX Jornadas Tributarias CGCE, Argentina, p.67.
[25] OECD/G20 BEPS Project. Addressing the Tax Challenges of the Digitalisation of the Economy – Policy Note. As approved by the Inclusive Framework on BEPS on 23 January 2019 (https://www.oecd.org/tax/beps/policy-note-beps-inclusive-framework-addressing-tax-challenges-digitalisation.pdf).

There should be no specific taxation on the digital economy. It should be taxed as any other activity in order not to diminish the free flows in commerce. As recommended previously,[26] harmonized nexus and profit allocation concepts should be applied, in line with the exigencies of digitalization. Ultimately, as more and more economic activity shifts online, the imperative of technological neutrality in applying taxes will become more urgent.

(2) E-payments, fintech, and other industrial regulations

E-payments are flourishing in many newly developed and developing countries and are reducing transactions costs, sometimes as a strong substitute to traditional payment systems. The underlying technological progress in biometric authentication, machine learning, blockchains, online credit scoring, and peer-to-peer (P2P) financing are among the global trends of fintech development. How to incorporate these new digital services into the system of monetary and financial regulations is an urgent topic.

The licensing system or safety standards for transportation services, lodging services, and others is another issue for how to incorporate new digital services into the traditional regulatory framework.

(3) AI

Incorporating new technologies into our economy and society is always a big challenge. One important topic is AI.

The OECD Committee on Digital Economy Policy established an Expert Group on Artificial Intelligence in Society (AIGO) in May, 2018, to scope principles for public policy and international cooperation. The currently proposed Guidelines for AI include five principles: inclusive and sustainable growth and well-being,

[26] T20 Argentina, "Tax Competition" (https://t20argentina.org/publicacion/tax-competition/).

human-centered values and fairness, transparency and explainability, robustness and safety, and accountability.[27]

(4) Information disclosure of firms and statistics

A fundamental issue is that the information on the activities of giant international platformers is not well disclosed. Outsiders have little capacity to understand how they organize and operate their activities domestically and internationally, where they have servers to store the data, and how they make profits. These problems have created a series of concerns on international digital businesses, particularly in the context of competition policy, taxation, and statistics. A possible remedy would be to introduce a system of information disclosure for their activities.

(5) Due process in government access to privacy/industry data

Another concern in the digital economy is how and to what extent the government can gain access to private or industry data. In many countries, the police can only enter a private company or residence to investigate through proper legal due process provide for in their judicial system. In the cyberspace, however, such rules seem to be blurred. At some point in time, we may need to introduce a proper due process for government intervention.

6. Industrial Policy and Strategic Trade and Investment Policies

Against the background of the above considerations regarding the governance of data, perhaps the most difficult issue facing the G20 is that of strategic trade and investment policy incentivised by the rents available in the international domain in the data driven economy. Genuinely new infant industries – or,

[27] http://www.oecd.org/going-digital/ai/oecd-moves-forward-on-developing-guidelines-for-artificial-intelligence.htm .

better, new disruptive business models – are emerging everywhere in the IoT domain. All the major jurisdictions are investing heavily to secure their foothold and gain competitive advantage. This is not necessarily a bad thing: the rationale for public investment in this domain is strong given the high risks involved, the rapidity of technological change which shortens the horizon for recovery of investments, and the potential social benefits of new technologies, which may far exceed private returns.

However as in prior instances when new technologies created such opportunities, the strategic trade and investment policy are leading to outright trade war. While the main action has been between the major technological powers, and in particular between the United States and China, it is natural for newly developed and developing economies to also consider the possibility of nurturing their own industries behind digital firewalls, with national e-commerce strategies. However, is it economically justifiable?

We can apply standard argument on infant industry protection even in the case of data-related businesses. First, check whether the industry will be internationally competitive at the end (Mill's criterion). Second, check whether the time-discounted future benefits would be larger than the time-discounted costs (Bastable's criterion). Then verify whether the government intervention is essential; the test of the existence of externalities.

One thing that we must consider is the benefit that small businesses and consumers obtain from "free" internet services. In addition, the speed of technological progress is so fast that a country may not catch up without introducing foreign services providers. Furthermore, a small country may not be in a position to fully utilize network externalities. Therefore, logically, for most small economies, the early liberalization of digital-related businesses is likely to be a better option than protecting infant domestic players.

At the same time, it is imperative that the digital divide not result in new forms of the middle income trap emerging and developing countries becoming simply rent payers to advanced country firms that have acquired dominant positions in the new digital economy.

Although data localization requirements are introduced for various reasons such as privacy protection, cybersecurity, and taxation, one of the hidden motivations tends to be the protection of domestic industries.[28] Policy purposes must be clarified, and careful assessment is necessary. At some point in time, we should develop a multilateral system of stocktaking protective measures for the flow of data and data-related businesses.

7. The path forward

The establishment of an efficient supporting policy regime for the digital economy is urgent, particularly for newly developed and developing countries. To set a "free flow of data" as a default is a useful approach to examine supporting policies in a systematic manner. The system of policies for the flow of data and data-related businesses must be neither too weak nor too strong.[29] G20 may want to undertake a comprehensive stocktaking of policies related to data flows and data-related businesses.

The launch of new talks on new e-commerce rules in the WTO is certainly good news, which G20 may want to support. However, considering the level of preparedness in supporting policies in other countries, a country may want to be selective in choosing its foreign counterparts. Ideally, we would like to establish a holistic multilateral framework, but it is likely that this will take time. Newly developed and developing countries may need to find a way to undergo liberalization quickly in order to enjoy the benefits from the digital economy and enhance international competitiveness.

The internet has vigorously developed as a private, decentralized initiative, rather than following a top-down approach by governments. Smartphones and CT also have strong characteristics of inclusiveness and have wide-ranging effects for various stakeholders. Thus, in the coming domestic and international rule-making for the flow of data and data-related businesses, we need to apply

[28] As for various forms of data localization requirements, see Cory (2017).
[29] Ciuriak (2018b) presents the nature of challenges that developing countries would face in their efforts to formulate data governance.

a multi-stakeholder approach including private companies, academics, and civil society.

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